WHAT IS CLAIMED IS

1. A plating bath for formation of a thin resistance layer on a surface of a conductive base, wherein said plating bath includes nickel ions and sulfamic acid or its salt as essential components and at least one of phosphoric acid, phosphorous acid, hypophosphorous acid, and salts of the same.

2. A plating bath for formation of a thin resistance layer as set forth in claim 1, wherein said plating bath further includes at least one of sulfuric acid, hydrochloric acid, and salts of the same.

3. A plating bath for formation of a thin resistance layer as set forth in claim 1, wherein a pH is made not more than 6.

4. A plating bath for formation of a thin resistance layer as set forth in claim 2, wherein a pH is made not more than 6.

5. A method of formation of a thin resistance layer in a plating bath as set forth in any one of claims 1 to 4, wherein said thin resistance layer is formed in a range of bath temperature of 30 to 80°C.

6. A method of formation of a thin resistance layer in a plating bath as set forth in any one of claims 1 to 4, wherein said thin resistance layer is formed in a range of current density of 1 to 30 A/dm^2.

7. A method of formation of a thin resistance layer

in a plating bath as set forth in any one of claims 1 to 4, wherein said thin resistance layer is formed using an insoluble anode.

8. A conductive base with a resistance layer wherein a thin resistance layer comprised of an Ni alloy layer containing 2 to 30 wt% of P is formed on the surface of the conductive base by a method of formation of a thin resistance layer in a plating bath as set forth in any one of claims 1 to 4 in a range of bath temperature of 30 to 80°C.

9. A conductive base with a resistance layer wherein a thin resistance layer comprised of an Ni alloy layer containing 2 to 30 wt% of P is formed on the surface of the conductive base by a method of formation of a thin resistance layer in a plating bath as set forth in any one of claims 1 to 4 in a range of current density of 1 to 30 A/dm^2.

10. A conductive base with a resistance layer wherein a thin resistance layer comprised of an Ni alloy layer containing 2 to 30 wt% of P is formed on the surface of the conductive base by a method of formation of a thin resistance layer in a plating bath as set forth in any one of claims 1 to 4 using an insoluble anode.

11. A conductive base with a resistance layer as set forth in claim 8 wherein at least the surface on which the resistance layer is formed has a roughness Rz of not more than 3.5 μm.

12. A conductive base with a resistance layer as set forth in claim 9 wherein at least the surface on which the resistance layer is formed has a roughness Rz of not more than 3.5 μm.

13. A conductive base with a resistance layer as set forth in claim 10 wherein at least the surface on which the resistance layer is formed has a roughness Rz of not more than 3.5 μm.

14. A circuit board material with a resistance layer comprised of an insulating substrate to at least one surface of which a conductive base with a resistance layer as set forth in claim 8 is adhered with the resistance layer at the base at the inside.

15. A circuit board material with a resistance layer comprised of an insulating substrate to at least one surface of which a conductive base with a resistance layer as set forth in claim 9 is adhered with the resistance layer at the base at the inside.

16. A circuit board material with a resistance layer comprised of an insulating substrate to at least one surface of which a conductive base with a resistance layer as set forth in claim 10 is adhered with the resistance layer at the base at the inside.

17. A circuit board material with a resistance layer comprised of an insulating substrate to at least one surface

of which a conductive base with a resistance layer as set forth in claim 11 is adhered with the resistance layer at the base at the inside.

18. A circuit board material with a resistance layer comprised of an insulating substrate to at least one surface of which a conductive base with a resistance layer as set forth in claim 12 is adhered with the resistance layer at the base at the inside.

19. A circuit board material with a resistance layer comprised of an insulating substrate to at least one surface of which a conductive base with a resistance layer as set forth in claim 13 is adhered with the resistance layer at the base at the inside.